

Durham Research Online

Deposited in DRO:

10 October 2017

Version of attached file:

Accepted Version

Peer-review status of attached file:

Peer-reviewed

Citation for published item:

Deng, H. and Coyle-Shapiro, J. and Yang, Q. (2018) 'Beyond reciprocity : a conservation of resources view on the effects of psychological contract violation on third parties.', *Journal of applied psychology*, 103 (5). pp. 561-577.

Further information on publisher's website:

<https://doi.org/10.1037/apl0000272>

Publisher's copyright statement:

Deng, H. and Coyle-Shapiro, J. and Yang, Q. (2018) 'Beyond reciprocity : a conservation of resources view on the effects of psychological contract violation on third parties.', *Journal of applied psychology*, 103 (5). pp. 561-577. © 2017 APA, all rights reserved. This article may not exactly replicate the final version published in the APA journal. It is not the copy of record.

Additional information:

Use policy

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a [link](#) is made to the metadata record in DRO
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Please consult the [full DRO policy](#) for further details.

Beyond Reciprocity: A Conservation of Resources View on the Effects of Psychological

Contract Violation on Third Parties

Hong Deng

Durham University Business School

Durham University

Jacqueline Coyle-Shapiro

Department of management

London School of Economics and Political Science

Qian Yang

School of Public Health

Zhejiang University

In Press, Journal of Applied Psychology

© 2017, American Psychological Association. This paper is not the copy of record and may not exactly replicate the final, authoritative version of the article. Please do not copy or cite without authors permission. The final article will be available, upon publication, via its DOI: 10.1037/apl0000272

Abstract

Building on conservation of resources theory, we cast resource depletion as a novel explanatory mechanism to explain why employees' experience of psychological contract violation results in harm to third parties outside the employee-organization exchange dyad. This resource-based perspective extends and complements the dominant social exchange perspective which views employee reactions to psychological contract violation as targeting the source of the violation – the organization. The present paper reports on three studies. Study 1 conducted an experiment with 109 participants and established the main effect of psychological contract violation on resource depletion. Study 2, using survey data from 315 medical employees and their immediate supervisors, found that after controlling for the social exchange mechanism (i.e., revenge cognitions toward the organization), resource depletion mediated the indirect effects of psychological contract violation on supervisory reports of employees' interpersonal harming toward coworkers and decision-making vigilance for clients. Further, we found that organizational and professional identification played opposing moderating roles in the effects of violation on resource depletion and consequently behavioral outcomes, such that these mediated relationships were stronger when organizational identification was high, and weaker when professional identification was high. Study 3 replicated all the results obtained in Studies 1 and 2 with time-lagged data from 229 medical employees across three measurement points. The findings confirm that resource depletion is a more effective explanation of the consequences of violation on third parties than revenge cognitions, although both are useful in predicting organization-directed outcomes (i.e., civic virtue and organizational rule compliance).

Keywords: psychological contract violation, social exchange theory, resource depletion, organizational/professional identification, interpersonal harming, decision-making vigilance

Social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960) provide the dominant theoretical perspective to explain employees' negative behavioral consequences of contract breach and violation by organizations (Zhao, Wayne, Glibkowski, & Bravo, 2007), particularly organizationally targeted outcomes (e.g., Deery, Iverson, & Walsh, 2006; Restubog, Hornsey, Bordia, & Esposito, 2008). Employees' revenge cognitions toward organizations, a typical social exchange mechanism emphasizing target specificity, has been found to underpin these negative acts (Bordia, Restubog, & Tang, 2008).

Although there is a strong consensus that social exchange theory can explain the effects of psychological contract violation on organization-directed outcomes, conceptual muddiness and inconsistent empirical findings exist dividing researchers on how and why psychological contract violation affects third parties not directly involved in the employee-organization dyadic exchange relationship (a spillover effect). On one hand, scholars have argued, based on social exchange theory, that the experience of violation triggers employees' negative actions toward both the organization and other parties without differentiating between the two (e.g., Bordia et al., 2008; Chen, Tsui, & Zhong, 2008). On the other hand, a contrary position is taken by other researchers who have argued that social exchange theory can only predict the negative behaviors directed at the source of harm because of its emphasis on exchange specificity (e.g., Conway, Kiefer, Hartley, & Briner, 2014; Robinson, 1996). Psychological contract violation should therefore only be associated with behaviors toward the responsible party (i.e., the organization) and not third parties (Restubog, Bordia, & Bordia, 2009). These contradictory views suggest that a target similarity perspective in social exchanges (Lavelle, Rupp, & Brockner, 2007; Rupp & Cropanzano, 2002) may be limited in providing a compelling framework to explain how psychological contract violation can spill over beyond the employee-organization dyad. Thus, it is imperative to explore other theoretical accounts in assessing its reach.

To address this, we draw upon conservation of resources (COR) theory (Hobfoll, 1989; Hobfoll & Freedy, 1993) and develop a resource-based model to explain how psychological contract violation affects employees' behaviors toward third parties, beyond the typical tit-for-tat social exchange explanation. According to COR theory, work-related stressors can drain employees' essential psychological resources for general self-regulation and lead to resource depletion, identified as a lack of positive mental energy in the our study (e.g., Halbesleben, 2010). Research has suggested that a depletion of such positive energy in one domain impairs employees' performance at full capacity in other domains (Halbesleben, Harvey, & Bolino, 2009). This domain or target non-specific nature of resource depletion lends itself to explaining how psychological contract violation affects "innocent" parties who are not the direct cause of violation – the experience of violation impairs employees' resources and to conserve energy, they are likely to "lash out" at others who are not responsible for the harm or to take shortcuts in decision-making to protect against further losses. Another insight of COR theory highly related to our resource-based model is that people evaluate stressors in different ways depending on their personal characteristics (Hobfoll, 1989; Hobfoll & Shirom, 2001). Such evaluations can modify the intensity or difficulty of coping with stressors and hence the amount of resources consumed. One important factor that may impact coping intensity is social identity (Wilk & Moynihan, 2005). In the current research, we examine and compare how organizational and professional identification shape resource dynamics arising from psychological contract violation because, as Baron and Kenny (1986) noted, understanding when an effect happens helps to answer why it happens (Baron & Kenny, 1986). The two types of identification may trigger different resource dynamics in response to violation and are expected to show opposing moderating roles in the violation-depletion relationship.

Our research makes several contributions. First, it develops a novel resource-based model to understand how the behavioral consequences of psychological contract violation affect third parties. Such spillover effects may not be easily predicted by a tit-for-tat matching rule according to which retaliation is directly targeted at the source of provocation (Axelrod, 1984). We compare the capacity of resource-based and social exchange perspectives to explain outcomes outside the domain of the employee-organization dyad. In doing so, we offer an additional, complementary explanation for a broader set of consequences of psychological contract violation. Second, by investigating the boundary conditions for the resource-based model, we answer Conway et al.'s (2014) call for research into when the spillover of breach/violation is more or less likely to happen. Third, the demonstration of the opposing moderating effects of two forms of identification extends the view that an individual's identity provides uniform benefits in resisting stress (e.g., Wilk & Moynihan, 2005). Figure 1 depicts our overall conceptual model.

Theory and Hypotheses Development

A Resource-based Mechanism Underlying the Third-Party Implications of Psychological Contract Violation

COR theory (Hobfoll & Shirom, 2001) outlines the causes and consequences of stress by focusing on the role of resources. Resources are broadly defined as individuals' total external and internal capacities to fulfill self-regulation and achieve goals (Hobfoll, 1989). Although resources can be anything perceived as important by individuals for goal achievement (Halbesleben, Neveu, Paustian-Underdahl, & Westman, 2014), we follow previous research (e.g., Fritz, Lam, & Spreitzer, 2011; Halbesleben & Bowler, 2007) and narrow it down to individuals' subjective mental energy, because this type of resource is subject to environmental influences such as workplace stressors (e.g., Ten Brummelhuis & Bakker, 2012) and has been an important focus in the COR literature (Halbesleben, 2010).

The central tenet of COR theory is that individuals strive to protect their resources and when confronted with a loss of resources, they adopt a defensive posture to avoid resource exertion and protect against further losses (Hobfoll & Freedy, 1993). In other words, experience of resource depletion (i.e., a reduction in the self's capacity of positive energy; Ryan & Deci, 2008) due to stressors in one domain can activate individuals' overall resource protection tendency and demotivate performance at full capacity in a different domain (Halbesleben et al., 2009). Because of this feature, COR theory has proved a useful framework to explain why employees displace their negative responses to other targets (Liu et al., 2015).

According to COR theory, negative work-related experiences are potential sources of energy loss (Halbesleben, 2006; Lee & Ashforth, 1996). Research using COR theory has demonstrated that stressful events, such as abusive supervision and work-family conflict (Chi & Liang, 2013; Demerouti, Bakker, & Bulters, 2004), can give rise to psychological strain and exhaustion of energy. Other research has supported an association between work-related psychological harm and individuals' resource loss (Brotheridge & Grandey, 2002; Christian & Ellis, 2011). These organizational stressors cause resource depletion mainly because sustained emotional and cognitive effort is needed to process and deal with them (De Jonge & Dormann, 2006). Psychological contract violation is an emotional manifestation of a broken promise by one's organization (Morrison & Robinson, 1997), involving "feelings of betrayal and deeper psychological distress [whereby] ... the victim experiences anger, resentment, a sense of injustice and wrongful harm" (Rousseau, 1989, p. 129). Because of these characteristics, psychological contract violation, like other organizational stressors, may trigger a series of emotional and cognitive processes to cope with strain, which could potentially tax employees' psychological resources (Robinson & Morrison, 2000).

First, the experience of being harmed and an angry reaction create a need for emotion regulation (Barrett, Gross, Christensen, & Benvenuto, 2001). Emotion regulation is

particularly salient when employees face pressure to perform prescribed duties and must redirect their attention back to work (Beal, Weiss, Barros, & MacDermid, 2005; Deng, Wu, Leung, & Guan, 2016) while feeling angry toward their organization. The emotional distress experienced as a result of psychological contract violation puts employees in a position in which they must suppress or neutralize their emotions and feelings in order to function normally and achieve organizational goals. Recent empirical evidence provides support for our reasoning that stressors entail a need for emotion regulation which leads to resource depletion (Chi & Liang, 2013; Liu et al., 2015). Second, psychological contract violation may trigger effortful sense-making processes. The findings of Parzefall and Coyle-Shapiro (2011) suggest that when employees experience breach/violation, they need to “make sense of the incongruous event in the exchange ... to understand, explain, and construct an account of what happened and why” (p. 22). Employees are activated to focus their attention on this harmful event to process, interpret, and seek explanations (Robinson & Morrison, 2000). It is well-documented in research on attributional instigation (or *when people ask why*) that individuals are particularly likely to engage in sense-making in response to unexpected, negative events (Pyszczynski & Greenberg, 1981; Wong & Weiner, 1981). Similarly, organizational research has supported the salience of sense-making processes when employees feel harmed by their organization (Cole, Bernerth, Walter, & Holt, 2010; Lian et al., 2014; Thau & Mitchell, 2010). Third, and relatedly, psychological contract violation is likely to trigger rumination (Ingram, 2015), and employees need to cope with their disruptive ruminative thoughts. Scholars have repeatedly found that mistreatment can lead to employee rumination (Baranik, Wang, Gong, & Shi, in press; Rafaeli et al., 2012; Wang, Bowling, Tian, Alarcon, & Kwan, in press).

Extensive research in different organizational contexts has linked the above activities to consumption of energy (e.g., Baranik et al., in press; Denson, Pedersen, Friese, Hahm, &

Roberts, 2011; Thau & Mitchell, 2010). Although these self-regulation activities are important for employees to process psychological contract violation, they are a “bad” investment of resources because they do not lead to positive goal achievement and thus, according to COR theory, cause increased levels of strain (Halbesleben et al., 2014; Hobfoll, 1989). Therefore, we propose that employees may experience resource depletion when psychological contract violation occurs. This prediction is consistent with the job demands-resources model, which posits that work-related demands drain employees’ mental and physical resources, and cause energy depletion (Bakker & Demerouti, 2007). The following hypothesis captures our theorizing:

Hypothesis 1: Psychological contract violation is positively related to resource depletion.

COR theory also informs what happens after resource depletion occurs (Hobfoll, 1989). It highlights the resultant resource-conservation motive following resource loss and argues that employees scale back on resource investment to protect their resources (Halbesleben et al., 2014). This conservation tendency may lead employees to save energy in all possible areas (e.g., Ten Brummelhuis & Bakker, 2012). Empirical research on COR theory has shown that resource depletion resulting from workplace stressors can lead to a number of unfavorable outcomes unrelated to the causes of these stressors (Greenbaum, Quade, Mawritz, Kim, & Crosby, 2014; Halbesleben, 2010). We follow this logic and expect resource depletion to be associated with increased harming behavior toward coworkers and reduced decision-making vigilance for clients – parties that are not responsible for the organization’s violation of employees’ psychological contract.

Although many factors may give rise to hostile impulses (Spector & Fox, 2005), individuals usually attempt to hold them in check in order to conform to social norms (Thau & Mitchell, 2010). However, when they experience resource depletion, they are less likely to

utilize their remaining resources to inhibit the harmful desires triggered by their environment. Uncontrolled desires turn into actual harming behavior. This reluctance to employ internal energy for self-regulation is driven by depleted employees' motivation to stem further losses (Halbesleben, 2010). A number of field studies have supported the depletion-aggression relationship (Christian & Ellis, 2011; Liu et al., 2015; Wheeler, Halbesleben, & Whitman, 2013). Consistent with this reasoning, when employees are drained as a consequence of psychological contract violation, they are less motivated to control their harmful impulses and are more likely to engage in harming behavior in response to trivial stimuli. Although coworkers are not responsible for psychological contract violation, they may become victims of depleted employees because the effect of depletion is not directional (Halbesleben et al., 2014). Therefore, we hypothesize:

Hypothesis 2a: Resource depletion is positively related to interpersonal harming toward coworkers.

Research on COR theory suggests that resource depletion influences employees' decisions regarding investment in their performance (Halbesleben & Bowler, 2007). The importance of resources for cognitive performance and effective decision-making is well-documented (Diestel, Cosmar, & Schmidt, 2013; Linden, Keijsers, Eling, & Schaijk, 2005). Making decisions with vigilance is a process through which "the decision maker clarifies objectives to be achieved by the decision, canvasses an array of alternatives, searches painstakingly for relevant information, assimilates information in an unbiased manner, and evaluates alternatives carefully before making a choice" (Mann, Burnett, Radford, & Ford, 1997, p. 2). This represents systematic cognitive processing that is laborious and effortful, and requires considerable amounts of energy (Chaiken & Eagly, 1989). According to COR theory, drained employees may be reluctant to expend further resources on such energy-consuming decision-making processes in an attempt to prevent

further losses. Resource depletion has been linked to poor logical reasoning and cognitive extrapolation, ineffective information searching and processing, and suboptimal decision-making (e.g., Sedek, Kofta, & Tyszka, 1993; Wan & Agrawal, 2011; Zyphur, Warren, Landis, & Thoresen, 2007). Because making choices between alternatives and thoroughly processing information are critical to decision-making vigilance (Mann et al., 1997), resource depletion reduces vigilance in decision-making. Making decisions in the best interests of one's clients is common to many professional contexts, such as hospitals. Although clients (e.g., patients) are not responsible for employees' feelings of violation by their organization, their interests may be affected by employees' cognitive performance impairment due to resource depletion. Depleted employees may not intentionally undermine their clients' interests by making suboptimal decisions, but post-depletion resource conservation tendency triggers effort withdrawal, causing them to hurt their clients unintentionally. Our reasoning is reflected in the following hypothesis:

Hypothesis 2b: Resource depletion is negatively related to decision-making vigilance for clients.

We hypothesize a positive association between psychological contract violation and resource depletion. We also hypothesize that resource depletion is positively related to interpersonal harming toward coworkers and negatively related to decision-making vigilance for clients. Together, these hypotheses suggest that resource depletion mediates the relationships between psychological contract violation and these behaviors toward third parties. These mediated relationships are in line with research on COR theory which has supported a spillover effect of negative experiences caused by organizations onto non-organizational targets (Liu et al., 2015; Ten Brummelhuis & Bakker, 2012; Wheeler et al., 2013). Because resource depletion functions differently from target-specific revenge cognitions (a social exchange mechanism capturing the intent to direct harmful behaviors at

the target of revenge; Bordia et al., 2008) and does not emphasize matching the target with the source of harm, we believe that resource depletion can effectively mediate the associations of psychological contract violation with interpersonal harming and decision-making vigilance when revenge cognitions is accounted for. We hypothesize:

Hypothesis 3a: Psychological contract violation is positively and indirectly related to interpersonal harming toward coworkers through resource depletion when the mediating role of revenge cognitions is considered.

Hypothesis 3b: Psychological contract violation is negatively and indirectly related to decision-making vigilance for clients through resource depletion when the mediating role of revenge cognitions is considered.

The Moderating Roles of Organizational and Professional Identification

There is reason to believe that the mechanism laid out in the above hypotheses may vary in its strength. Hobfoll (1989) argued that individuals' personal characteristics (e.g., identity) affect how they evaluate stressors, thereby shaping their degree of reactivity to stressful events, the intensity of coping activities, and resource loss. Individuals may give different weights to a given stressor depending on its personal significance or how threatening it is (Lazarus & Folkman, 1984). For example, examination failure is generally regarded as a source of stress, but it would be less stressful and taxing if a student did not endorse or identify with the value of academic excellence (Hobfoll, 1989). Similarly, if an employee does not identify with his/her organization, harm done by the organization may be less psychologically challenging and easier to cope with, resulting in less resource depletion. Here, we propose that employees' organizational and professional identification will play critical yet contrasting roles in shaping the violation-depletion relationship because they prompt different appraisals of violation and different coping processes.

Organizational identification refers to a perceived oneness with one's organization whereby an individual defines him/herself in terms of organizational membership (Mael & Ashforth, 1992). Employees who strongly identify with their organizations integrate their personal identity with their organizational identity (Ashforth & Humphrey, 1993).

Psychological contract violation captures a sense of injustice and wrongful harm associated with perceptions of negative organizational treatment (Morrison & Robinson, 1997; Rousseau, 1989). According to COR theory (Hobfoll, 1989), a sense of oneness with one's organization may make it difficult for employees to distance themselves from a harmful organizational stressor and devalue its personal significance. Instead, high organizational identification heightens the threatening impact of psychological contract violation and prompts employees to perceive it as a personal attack. Moreover, the feeling of betrayal stands in stark contrast to the message signaled by organizational identification – that one shares an identity with the organization and is an important organizational member. This inconsistency and the enhanced personal distress associated with the experience of psychological contract violation pose a greater challenge for employees to regulate their emotions, make sense of such violation, and engage in other stress-coping activities (cf. Festinger, 1957), thus depleting more resources through engaging in coping processes (e.g., Schmader & Johns, 2003). On the other hand, employees with low organizational identification do not have a sense of oneness with their organization (Ashforth & Mael, 1989). They may consider their organization to be a less trustworthy “outsider” in general.

Psychological contract violation may not come as a total surprise and carry less personal significance, leading to less intensive coping processes. Violation thus becomes less cognitively challenging and resource taxing. Therefore, we hypothesize:

Hypothesis 4: Organizational identification positively moderates the relationship between psychological contract violation and resource depletion such that this positive relationship is stronger when organizational identification is higher rather than lower.

Professional identification is another important but different form of identification, describing employees' sense of oneness with their profession (Hekman, Bigley, Steensma, & Hereford, 2009). Professional identification is relatively independent of where an individual works (Bamber & Iyer, 2002; Settles, 2004). Employees with high professional identification integrate their personal identity with their profession (Tajfel & Turner, 1986) but not necessarily with their organization. They may not view their organization or its representatives the same way as they view their profession; they may even view them as outsiders (Hekman, Steensma, Bigley, & Hereford, 2009). High professional identification leads individuals to see outsiders as less trustworthy and unsupportive of their interests (Brewer, 1979; Kramer, Brewer, & Hanna, 1996). Therefore, employees with high professional identification may feel more relationally distant from their organizations (Brewer, 1979) and, following the logic of COR theory, psychological contract violation may not be seen as completely unexpected or identity-challenging. The following coping processes are less demanding and depleting because high professional identification allows employees to easily ascribe the experience of violation to their organization's lack of trustworthiness. In contrast, the boundary between profession and organization may be blurred for employees with low professional identification. Organizations are not necessarily considered outsiders and may be evaluated more positively in terms of their trustworthiness (Abrams & Hogg, 1988; Jetten, Spears, & Manstead, 1996). Employees experiencing violation may not have a plausible explanation (e.g., my organization is not trustworthy) for that violation, in contrast to employees with high professional identification. They will not necessarily view their sense of betrayal by their organization (i.e., psychological contract violation) through the lens of an

offense committed by an outsider. Consequently, these employees will use relatively more resources in sense-making, emotion regulation, and rumination in response to psychological contract violation. We hypothesize the following:

Hypothesis 5: Professional identification negatively moderates the relationship between psychological contract violation and resource depletion such that this positive relationship is weaker when professional identification is higher.

We hypothesize that resource depletion mediates the associations of psychological contract violation with interpersonal harming toward coworkers and decision-making vigilance for clients, and that organizational and professional identification differentially moderate the effect of psychological contract violation on resource depletion. Taken together, the above considerations constitute a first-stage moderated mediation model for psychological contract violation. We therefore hypothesize:

Hypothesis 6a: Organizational identification moderates the positive indirect effect of psychological contract violation on interpersonal harming toward coworkers through resource depletion such that this indirect effect is stronger when organizational identification is higher.

Hypothesis 6b: Organizational identification moderates the negative indirect effect of psychological contract violation on decision-making vigilance for clients through resource depletion such that this indirect effect is stronger when organizational identification is higher.

Hypothesis 7a: Professional identification moderates the positive indirect effect of psychological contract violation on interpersonal harming toward coworkers through resource depletion such that this indirect effect is weaker when professional identification is higher.

Hypothesis 7b: Professional identification moderates the negative indirect effect of psychological contract violation on decision-making vigilance for clients through resource depletion such that this indirect effect is weaker when professional identification is higher.

We conducted three independent studies to test the hypotheses. The first was an

experimental study (Study 1) to establish the effect of psychological contract violation on resource depletion, a fundamental relationship in the overall model. In this experiment, psychological contract violation was manipulated using autobiographical narratives (Baumeister, Stillwell, & Wotman, 1990). We then conducted two survey studies (Studies 2 and 3) with two different samples of medical professionals to test all the hypotheses and compare the effects of resource depletion and revenge cognitions.

Study 1

Participants and Procedure

We used the autobiographical narratives method, a technique widely used in experimental psychology as an alternative to the direct manipulation of independent variables (e.g., Baumeister et al., 1990; DeWall & Baumeister, 2006; Leunissen, De Cremer, Reinders Folmer, & Van Dijke, 2013). Scholars have demonstrated that having participants describe an experience can evoke responses similar to those triggered by direct manipulations of this experience (DeWall & Baumeister, 2006). Participants were recruited through a Chinese website (www.sojump.com) similar to Qualtrics. They were paid \$2 for completing a short survey. A link to the experimental materials was sent to the participant pool. We recruited 109 full-time employees from various professions and industries (e.g., sales, accountants, human resource management professionals, teachers, customer service providers, IT engineers, and civil servants), 40% of whom were male. Their average age was 31.7 and average tenure was 8.5 years. They all had an associate degree or above. Although China does not have institutional review boards, we complied with APA's policy of ethical treatment of participants in this study and the following studies.

Psychological contract violation was manipulated by having participants complete a vivid recall task. They were instructed to write an autobiographical narrative recalling a time they had experienced psychological contract violation, psychological contract fulfillment, or

an unrelated event. Participants were then asked to respond to a survey capturing resource depletion. The online system randomly assigned participants to one of three conditions – violation, fulfillment, or control. The instruction for the violation condition contained definitions of psychological contracts and violation, and participants were asked to write about their experience of psychological contract violation by their organization. They were urged to describe this experience vividly and with as much detail as possible so that readers could “picture themselves in that situation.” The instructions for the fulfillment condition mirrored those for violation, with the term “fulfillment” substituted for “violation” in the wording. For example, “experienced psychological contract violation by your organization” became “experienced psychological contract fulfillment from your organization.” In the control condition, participants were instructed to write a detailed essay about a significant experience they had had in the past.

After completing the essay, participants were asked to complete the resource depletion survey based on how they felt during the experiences they had described. All items were translated from English into Chinese using the procedures outlined by Brislin (1980). Responses were made on a 6-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Two different measures of resource depletion were used to demonstrate the robustness of the results. The first was a 25-item state resource depletion scale from Ciarocco, Twenge, Muraven, and Tice (2007), which has been used in previous research (e.g., Christian & Ellis, 2011; Lee, Kim, Bhawe, & Duffy, 2016; Lian et al., 2014). Sample items of this scale included “I had lots of energy” and “I felt sharp and focused.” We also used four items from the vitality scale developed by Ryan and Frederick (1997), which measures “the experience of having positive energy available” (p. 530) that one can harness or regulate for purposive action. This scale has been used frequently as an alternative measure of resource capacity to the 25-item scale in research on resource depletion as a lack of subjective vitality is a direct

manifestation of resource depletion (Gao et al., 2014; Moller, Deci, & Ryan, 2006; Muraven, Gagné, & Rosman, 2008; Weinstein & Ryan, 2010). Sample items were “I felt energized,” and “I had energy and spirit.” Positively worded items in both measures were reverse-scored to capture resource depletion. Cronbach’s alpha for both measures was .97. These two measures were highly correlated, as expected ($r = .86, p < .01$).

Results and Discussion of Study 1

ANOVA results indicated significant differences between the three groups on the first resource depletion measure (Ciarocco et al., 2007): $F(2, 106) = 22.17, p < .01$, and $\eta^2 = .30$. The results of post hoc analysis confirmed that participants in the violation condition experienced significantly more resource depletion than those in the fulfillment condition ($M = 4.82$ vs. $M = 2.85, p < .01$, Cohen’s $d = 1.84$) and the control condition¹ ($M = 4.82$ vs. $M = 3.69, p < .01$, Cohen’s $d = 0.85$). The results also showed significant variation between the three experimental groups on the second resource depletion measure (Ryan & Frederick, 1997): $F(2, 106) = 18.20, p < .01$, and $\eta^2 = .26$. Post hoc analysis showed that participants in the violation condition reported significantly greater resource depletion than counterparts in the fulfillment condition ($M = 5.04$ vs. $M = 2.69, p < .01$, Cohen’s $d = 1.67$) and the control condition ($M = 5.04$ vs. $M = 3.76, p < .01$, Cohen’s $d = 0.74$). These findings support the main effect of psychological contract violation on resource depletion across two measures.

Study 1 underscores resource depletion as a direct response to psychological contract violation. While this experiment could be an initial step in establishing a causal relationship, evidence from real organizational settings is needed to provide confidence in the external validity of the findings. Moreover, the overall mediation hypotheses and moderated mediation hypotheses were not tested in Study 1. We conducted a survey study in a

¹ Content coding for the control condition revealed that participants had written a similar number of positive and negative narratives. This condition can thus be considered “neutral” as its mean for resource depletion was approximately halfway between the violation and fulfillment conditions.

naturalistic field setting (Study 2) to replicate Hypothesis 1 and to test the complete model.

Study 2

Method

Sample and Procedures

Data were collected from medical centers in a city in Southern China. We invited 500 medical employees who were in frequent contact with patients and their immediate supervisors to participate in a survey. These medical centers were state-owned and provided various services for residents who lived nearby for minimal fees. Participants were doctors and nurses from different departments such as Accident & Emergency, Anesthesiology, Gynecology & Obstetrics, Physiotherapy, and Intensive Care Unit (ICU). We administered separate surveys at two time points. One of the authors was on-site with research assistants at both time points. Participants were assured of their confidentiality, and they participated on a voluntary basis. At Time 1, the employee survey included measures of organizational identification, professional identification, psychological contract violation, resource depletion, and revenge cognitions. At Time 2 (one month later), the outcome variables (i.e., interpersonal harming and decision-making vigilance) were assessed by 62 direct supervisors. These supervisors worked closely with focal employees in the same team and were in a good position to observe employees' interpersonal behavior and decision-making. After matching the employee survey with the supervisor survey, we obtained 315 sets of complete questionnaires, yielding a response rate of 63%. All employees had an associate degree or above, 44% of them were doctors, and 78% of them were female. The average age was 32, and average tenure was 9.90 years.

Measures

As in Study 1, all items were translated from English into Chinese (Brislin, 1980) and measured on a 6-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*) unless

otherwise stated.

Psychological contract violation. This was measured using a 4-item scale developed by Robinson and Morrison (2000), which has been used widely to capture psychological contract violation (e.g., Bordia et al., 2008; Hekman, Bigley, et al., 2009). Sample items included “I feel betrayed by this organization” and “I feel extremely frustrated by how I have been treated by this organization.” Cronbach’s alpha was .92.

Resource depletion. The short 4-item measure (Ryan & Frederick, 1997) validated in Study 1 was used again. As explained above, this scale has been used widely in the resource depletion literature (e.g., Gao et al., 2014; Muraven et al., 2008) and has shown a strong correlation with the 25-item scale used in Study 1. Following previous research (e.g., Lian et al., 2014), we asked employees to evaluate their experience of a lack of resources in general rather than at a given moment. Cronbach’s alpha was .90.

Organizational and professional identification. We used a 6-item scale developed by Mael and Ashforth (1992) to evaluate the extent to which employees identified with their organization. Sample items included “When someone criticizes this organization, it feels like a personal insult” and “When I talk about this organization, I usually say ‘we’ rather than ‘they.’” Cronbach’s alpha was .89. Following Hekman, Bigley, et al. (2009), we captured professional identification using the same six items of organizational identification, but we replaced “this organization” with “medical professionals” or “medicine.” Sample items were “When someone criticizes medical professionals, it feels like a personal insult” and “Medicine’s successes are my successes.” Cronbach’s alpha was .88.

Interpersonal harming toward coworkers. We measured interpersonal harming with four items developed by Cortina, Magley, Williams, and Langhout (2001) on a 6-point scale ranging from 1 (*never*) to 6 (*always*). Sample items were “This employee puts coworkers down or is condescending to coworkers” and “This employee makes demeaning or

derogatory remarks about coworkers.” Cronbach’s alpha was .72.

Decision-making vigilance for clients. We measured decision-making vigilance using a 6-item scale from Mann, Burnett, Radford, and Ford (1997), also answered on a 6-point scale ranging from 1 (*never*) to 6 (*always*). Supervisors were instructed to evaluate subordinates’ vigilance when making medical decisions for their patients (i.e., how to treat or care for patients). Sample items were “This employee tries to find out the disadvantages of all alternatives” and “When making decisions, this employee likes to collect a lot of information.” Cronbach’s alpha was .91.

Revenge cognitions. We included revenge cognitions as a social exchange mechanism. By simultaneously accounting for two mechanisms (i.e., reciprocity vs. resource depletion) of psychological contract violation, we were able to examine the unique role of resource depletion in mediating the associations of psychological contract violation with the outcome variables aimed at third parties (i.e., coworkers and clients). To measure this variable, we used five items that were originally developed by Bradfield and Aquino (1999) to assess revenge cognitions toward individuals. This measure has been adapted and validated to capture revenge cognitions toward organizations in previous psychological contract research (Bordia et al., 2008; Restubog, Zagenczyk, Bordia, Bordia, & Chapman, 2015). Sample items were “I am going to get even with this organization” and “I will make this organization pay.” Cronbach’s alpha was .90.

To demonstrate the robustness of our results, we considered the potential effects of demographic variables such as gender, tenure, and education because they could influence outcomes (e.g., Lam, Van der Vegt, Walter, & Huang, 2011; Sturman, 2003). We also controlled for the role of employees (i.e., doctors or nurses). We ran analyses with and without these controls, and the levels of significance were similar. We report the results without the controls (Becker, 2005).

Data Analysis

While all study variables were captured at the individual level (level 1), employees were nested within groups (level 2). Hence, ordinary regression analysis was not appropriate because the nested structure might have violated the assumption of independent observations. More importantly, the ICC(1) values for the dependent variables (i.e., interpersonal harming and decision-making vigilance) were .44 and .29, respectively, supporting the use of multilevel methods to test the hypotheses. Specifically, following the analytic approaches specified by Edwards and Lambert (2007), we utilized random intercept models (Bickel, 2007) to test our hypotheses at the individual level, while taking into account possible group effects. These multilevel regression analyses generated estimates comparable to unstandardized regression coefficients. To test the mediation hypotheses, we estimated 95% confidence intervals (CI) around the population values of the conditional indirect relationships using Selig and Preacher's (2008) Monte Carlo method (for similar approaches, see Zhang & Peterson, 2011; Zhou, Wang, Chen, & Shi, 2012). This method is recommended by Preacher, Zyphur, and Zhang (2010) to test the significance of indirect effects because it avoids the dubious assumption of normal distribution of indirect relationships. We performed multiple multilevel regression analyses in a hierarchical manner to compare the effects of resource depletion with those of revenge cognitions (Budescu, 1993). We calculated $\Delta\chi^2$ for model comparison purposes. A significantly smaller χ^2 value indicates an improved model fit (Bickel, 2007). R_1^2 was reported for each model to indicate variance explained (Bickel, 2007). All variables were standardized prior to the analyses (Aiken & West, 1991).

Results and Discussion of Study 2

Descriptive Statistics and Confirmatory Factor Analyses

Table 1 presents means, standard deviations, and bivariate correlations. Before testing our hypotheses, we evaluated the discriminant validity of the measures by conducting a series

of confirmatory factor analyses (CFA) using MLM estimation (Byrne, 2012). As shown in Table 2, the CFA results suggested that the expected 7-factor model fit the data significantly better ($\chi^2 = 1084.99, p < .01, df = 539, CFI = .90, RMSEA = .06, SRMR = .05$) than a 6-factor model combining resource depletion and revenge cognitions ($\Delta\chi^2 = 448.63, \Delta df = 6, p < .01$), a 6-factor model combining organizational identification and professional identification ($\Delta\chi^2 = 125.27, \Delta df = 6, p < .01$), a 6-factor model combining interpersonal harming and decision-making vigilance ($\Delta\chi^2 = 196.55, \Delta df = 6, p < .01$), and a 2-factor model in which all employee-reported variables formed one factor and all supervisor-reported variables formed the other ($\Delta\chi^2 = 1613.87, \Delta df = 20, p < .01$).

Hypotheses Testing

The results are presented in Table 3. Psychological contract violation was positively related to resource depletion ($B = .44, p < .01$), supporting Hypothesis 1. Support was found for Hypotheses 2a and 2b as resource depletion was positively associated with interpersonal harming ($B = .11, p < .05$) and negatively related to decision-making vigilance ($B = -.15, p < .01$), after taking into account revenge cognitions, which was not significantly associated with either outcome. We note that when revenge cognitions was omitted, Hypotheses 2a and 2b were still supported. Turning to Hypothesis 3a, the indirect relationship between psychological contract violation and interpersonal harming through resource depletion was significant and positive (estimate = .05, 95% CI = [.01, .10]). The indirect association between psychological contract violation and decision-making vigilance via resource depletion was also significant but negative (estimate = -.07, 95% CI = [-.12, -.01]). Thus, Hypotheses 3a and 3b were supported.

Next, we examined the moderation and moderated mediation hypotheses. Consistent with Hypothesis 4, the results demonstrated a significant and positive interaction between psychological contract violation and organizational identification ($B = .15, p < .01$). We

plotted this interaction at the values of 1 SD above and below the mean of organizational identification in Figure 2a (Aiken & West, 1991). As expected, the positive relationship between violation and resource depletion was significant when organizational identification was high (simple slope = .36, $p < .01$) but not when it was low (simple slope = .06, *ns.*). Consistent with Hypothesis 5, we found a significant and negative interaction between psychological contract violation and professional identification ($B = -.15$, $p < .05$). The interaction pattern is plotted in Figure 2b. It shows that the relationship between violation and resource depletion was significant when professional identification was low (simple slope = .36, $p < .01$) but not when it was high (simple slope = .06, *ns.*).

To test Hypotheses 6a and 6b, we examined the conditional indirect relationships between psychological contract violation and the outcome variables through resource depletion at higher (+ 1 SD) and lower (− 1 SD) values of organizational identification. The conditional relationship between psychological contract violation and interpersonal harming via resource depletion was significant when organizational identification was high (estimate = .04, 95% CI = [.01, .08]) but not when it was low (estimate = .01, 95% CI = [−.01, .03]). Similarly, the conditional relationship to decision-making vigilance was significant when organizational identification was high (estimate = −.05, 95% CI = [−.11, −.01]) but not when it was low (estimate = −.01, 95% CI = [−.04, .01]). We conducted the same analysis for Hypotheses 7a and 7b. The conditional relationship to interpersonal harming was significant when professional identification was low (estimate = .04, 95% CI = [.004, .08]) but not when it was high (estimate = .01, 95% CI = [−.01, .03]). The conditional relationship to decision-making vigilance was significant when professional identification was low (estimate = −.05, 95% CI = [−.11, −.01]) but not when it was high (estimate = −.01, 95% CI = [−.04, .02]).

Study 2 replicated and extended the findings of Study 1 by establishing the effective mediating role of resource depletion linking psychological contract violation to the two

outcomes that fall outside those typically examined in dyadic exchange relationships between employees and organizations. We also found that organizational identification accentuates the effect of psychological contract violation on resource depletion and also its indirect effects on the outcomes. In contrast, professional identification mitigates the influence of psychological contract violation on resource depletion and its associated indirect effects. These findings support our theorizing that resource depletion provides a unique explanation for the implications of psychological contract violation for third parties such as coworkers and clients. However, we did not include outcomes targeting organizations in this study, which limits the extent to which we can compare the effects of the two mechanisms. Also, psychological contract violation and the mediators were measured at the same time point. To overcome these limitations, we conducted another study (Study 3) with data collected at three time points, and expanded the range of outcomes to include organization-directed behaviors (i.e., civic virtue and organizational rule compliance).

Study 3

Sample and Procedure

We collected data from medical employees working at medical centers in another city in Southern China. These medical centers primarily provided general medical services to local elderly people with chronic conditions such as diabetes and high blood pressure. To reduce common method bias, employees filled out questionnaires administered at three different time points. The Time 1 questionnaire included measures of psychological contract violation, organizational identification, and professional identification; the Time 2 questionnaire measured resource depletion and revenge cognitions two to three weeks later; and the third questionnaire assessed the outcome variables at Time 3 (two to three weeks after Time 2). After matching the employee surveys across three time points, we obtained 229 complete questionnaires out of 350, yielding a response rate of 65%. All employees had an

associate degree or above, 45% of them were doctors, and 80% of them were female. The average age was 33, and the average tenure was 6.19 years.

Measures and Analysis

All variables were measured using the same scales and in the same way as in Study 2, except the two additional organizational outcomes included in this study. The reliabilities of these variables were as follows: .95 for psychological contract violation, .83 for organizational identification, .85 for professional identification, .95 for resource depletion, .97 for revenge cognitions, .73 for interpersonal harming, and .91 for decision-making vigilance. Civic virtue was measured with a 3-item scale developed by Podsakoff, Ahearne, and MacKenzie (1997) with a Cronbach's alpha of .80. Sample items were "Provide constructive suggestions about how the organization can improve its effectiveness" and "Attend and actively participate in meetings in the organization." Organizational rule compliance was assessed with four items (Tyler & Blader, 2005), whose Cronbach's alpha was .75. Sample items included "Use organizational rules to guide what to do on the job" and "Follow organizational rules about how you should spend your time at work." The data were analyzed in the same manner outlined in Study 2. The results were identical with and without controlling for the same demographic variables (i.e., gender, tenure, education, and occupation). Again, we reported the results based on the analysis omitting these controls.

Results and Discussion of Study 3

Descriptive Statistics and Confirmatory Factor Analyses

Means, standard deviations, and bivariate correlations are shown in Table 4, and CFA results in Table 5. As expected, the 9-factor model fit the data significantly better ($\chi^2 = 1386.06$, $p < .01$, $df = 783$, $CFI = .91$, $RMSEA = .06$, $SRMR = .06$) than an 8-factor model combining resource depletion and revenge cognitions ($\Delta\chi^2 = 727.02$, $\Delta df = 8$, $p < .01$), an

8-factor model combining organizational identification and professional identification ($\Delta\chi^2 = 31.51$, $\Delta df = 8$, $p < .01$), a 7-factor model in which the two third-party outcomes (i.e., interpersonal harming and decision-making vigilance) were combined and the organizational outcomes (i.e., civic virtue and organizational rule compliance) were combined ($\Delta\chi^2 = 392.77$, $\Delta df = 15$, $p < .01$), and a 2-factor modeling in which all behavioral outcomes formed one factor and all the other variables formed the other ($\Delta\chi^2 = 2638.80$, $p < .01$, $\Delta df = 35$).

Hypotheses Testing

Table 6 shows the results of the analyses. Consistent with Studies 1 and 2, psychological contract violation was found to be positively related to resource depletion ($B = .27$, $p < .01$), which in turn was positively associated with interpersonal harming ($B = .19$, $p < .01$) and negatively associated with decision-making vigilance ($B = -.38$, $p < .01$) controlling for revenge cognitions. Again, it is worth mentioning that these effects were significant without taking revenge cognitions into account. However, revenge cognitions did not have a significant relationship with third-party outcomes in the presence of resource depletion. Furthermore, resource depletion significantly mediated the indirect effects of psychological contract violation on both interpersonal harming (estimate = .05, 95% CI = [.02, .09]) and decision-making vigilance (estimate = .10, 95% CI = [-.16, -.05]). Therefore, Hypotheses 1 to 3 were supported.

Supporting Hypotheses 4 and 5, the interaction between psychological contract violation and organizational identification was positive ($B = .24$, $p < .05$), while its interaction with professional identification was negative ($B = -.20$, $p < .05$). The interaction patterns are plotted in Figures 3a and 3b. The relationship between contract violation and resource depletion was significant (simple slope = .47, $p < .01$) when organizational identification was high but not when it was low (simple slope = -.01, *ns.*). In contrast, the effect of contract violation on resource depletion was significant (simple slope = .43, $p < .01$)

when professional identification was low but not when it was high (simple slope = .03, *ns.*).

We further tested Hypotheses 6 and 7. The conditional relationship between psychological contract violation and interpersonal harming through resource depletion was significant when organizational identification was high (estimate = .09, 95% CI = [.03, .17]) but not when it was low (estimate = -.002, 95% CI = [-.05, .04]). Similarly, the conditional relationship between violation and decision-making vigilance was significant when organizational identification was high (estimate = -.18, 95% CI = [-.30, -.08]) but not when it was low (estimate = -.004, 95% CI = [-.08, .09]). However, the conditional relationship to interpersonal harming was significant when professional identification was low (estimate = .08, 95% CI = [.03, .15]) but not when it was high (estimate = .01, 95% CI = [-.04, .05]). The conditional relationship to decision-making vigilance was also significant when professional identification was low (estimate = -.16, 95% CI = [-.27, -.07]) but not when it was high (estimate = -.01, 95% CI = [-.10, .08]).

Finally, we examined the effects of resource depletion and revenge cognitions on the two organizational outcomes. When included in the regression model simultaneously, both were significantly related to civic virtue ($B = -.37, p < .01$ for resource depletion; $B = -.16, p < .05$ for revenge cognitions) and organizational rule compliance ($B = -.18, p < .01$ for resource depletion; $B = -.19, p < .05$ for revenge cognitions).

Study 3 fully replicates and extends the findings of the first two studies. It adds additional support for resource depletion as an explanation for the third-party implications of psychological contract violation. It also confirms the differential moderating roles of two types of identification for the depleting effect of violation. Consistent with the social exchange theorizing, our findings support the target similarity perspective whereby revenge cognitions was significantly related to organizationally directed outcomes (civic virtue and organizational rule compliance) but unrelated to outcomes directed toward third parties

(interpersonal harming and decision-making vigilance) when resource depletion was accounted for. Taken together, the findings demonstrate the non-directional and target free impact of resource depletion, supporting the argument that it serves as a more effective mechanism underlying the implications of violation for third parties.

General Discussion

Theoretical Implications

The current research advances our understanding of why psychological contract violation has negative consequences for third parties by highlighting and clarifying the role of resources. We extend prior theorizing in two important respects. First, the development of a resource-based perspective complements the social exchange perspective by offering a more compelling theoretical lens to illustrate the broader “unintentional” consequences of psychological contract violation. A tit-for-tat perspective asserts that employees tend to develop distinct exchanges with different parties at work (e.g., employers, coworkers, clients) and that they direct their actions toward the focal party in response to their evaluation of social exchange relationships (Lavelle et al., 2007; Rupp & Cropanzano, 2002). Consistent with this, researchers have selected outcomes that adhere to the target similarity model such as organizational deviance (versus interpersonal deviance) as an outcome of breach/violation (Restubog et al., 2015) or civic virtue because “it is usually directed at the organization and more likely to be a purposeful contribution to the organization by an employee” (Robinson, 1996, p. 584). Our research concurs with this notion, demonstrating that revenge cognitions (a social exchange mechanism) has unique predictive power regarding organization-directed outcomes but falls short in explaining how the effects of psychological contract violation can transfer across contexts to influence third parties. As the referent in our measure of revenge cognitions was the organization (e.g., Bordia et al., 2008; Restubog et al., 2015), we note that our conclusion may be limited to this particular referent.

In contrast to the target specificity argument, COR theory posits that different work-related stressors can drain resources important for self-regulation and goal achievement and that a state of resource depletion can trigger an individual's tendency to protect resources in other domains (Hobfoll, 1989; Hobfoll & Freedy, 1993). It follows that the consequences of resource depletion are not necessarily directed at the target that has caused depletion (Liu et al., 2015). Hence, COR theory provides a more convincing framework to account for the spillover effects of psychological contract violation and in doing so answers a call for the expansion of outcomes of violation beyond the narrowly focused organizational outcomes (Bordia, Restubog, Bordia, and Tang (2010). Our findings highlight resource depletion as a promising explanation of how psychological contract violation influences parties not directly involved in the employee-organization relationship, suggesting that psychological contract violation has a potentially larger reach than previously assumed.

Second, our resource-based model complements the social exchange perspective by broadening the fundamental assumption underlying people's responses to psychological contract violation. At the core of the psychological contracts literature is the notion that when employees experience violation, they sense a loss caused by the organization, develop negative exchange cognitions, and deliberately engage in negative organizational behaviors (Bordia et al., 2008). This implies that employees are rational actors who maximize gains and minimize losses in exchanges with their organizations based on economic calculations. Although this seems logical, scholars have criticized the underpinning rational basis to the exchange and argued that it cannot exclusively and solely explain behavior (Clark & Mills, 1979). Empirical research has shown that employee reactions to negative organizational treatment are not always driven by a "tit for tat" motive (Thau & Mitchell, 2010). If an employee who feels violated reciprocates with deviant behavior, he/she is likely to receive more negative treatment from the organization and suffer further losses, contradicting the

rationality assumption of social exchange theory. The resource-based perspective taken in our research resolves this contradiction by suggesting that psychological contract violation triggers negative behavior because it drains employees' regulatory resources, activating an instinctive resource-conservation motive which makes them behave involuntarily in a counter-normative manner. In other words, this new perspective suggests that employees do not necessarily decide to perform poorly or engage in negative behaviors to get even with their organization. Rather, they do so because such violation drains them, prompting them to scale back on resource consumption to rebalance their own internal resources.

The investigation of the interaction effect of two types of identification also contributes to the literature on psychological contract violation. The boundary conditions of psychological contract breach/violation have drawn much attention from researchers primarily because if perceived violation has a negative effect on outcomes, "it would be useful to identify variables that mitigate this impact" (Orvis, Dudley, & Cortina, 2008, p. 1183). Restubog, Bordia, and Bordia (2009) found that procedural justice mitigates the detrimental effect of psychological contract breach on affective commitment because it compensates for the negative exchange triggered. Based on this finding, one might conclude that variables which reinforce a positive exchange orientation toward organizations can reduce the harm associated with breach/violation. Our research sends a cautionary message because organizational identification increases and professional identification attenuates the harmful impact of violation. These findings provide a more nuanced understanding of the conditions in which the negative effect of violation is likely to occur (Conway et al., 2014).

Investigating the moderating effects of organizational and professional identification also brings insights into our understanding of the boundary conditions of resource depletion. Research has found that many phenomena can be depleting, such as sleep deprivation and emotional labor (Brotheridge & Grandey, 2002; Christian & Ellis, 2011). In seeking to

understand when depletion effects are more or less likely to happen, scholars have examined the role of the availability of internal and external resources in compensating for resource losses. For example, Liu et al. (2015) found that perceived organizational support alleviated the effect of work-family conflict on emotional exhaustion. In this research, organizational identification and professional identification determine the level of resource depletion associated with psychological contract violation by shaping the difficulty of coping processes and sense-making rather than acting as extra resource compensators.

Finally, our overarching model reinforces the concept of the loss spiral (i.e., a process through which an initial loss begets further losses) in COR theory (Hobfoll, 1989). Following a broad definition of resources (Halbesleben et al., 2014; Hobfoll, 1989), the framework we proposed represents a “triple loss spiral”. Specifically, this process starts with psychological contract violation as the first resource loss related to objects (e.g., denial of a pay raise or promotion), dealing with which triggers the second loss on mental energy, followed by the third loss on human capital captured by suboptimal performance and social capital (as harmful acts may strain relationships with coworkers). These results corroborate an interesting corollary of COR theory: that those who suffer from resource loss are more susceptible to further loss and less likely to generate new resources.

Practical Implications

Practitioners have been advised not to violate psychological contracts because doing so damages morale and loyalty (Orvis et al., 2008). Our research takes this further by demonstrating the harmful effect of violation on employees’ resources, which eventually takes a toll on productivity (Zyphur et al., 2007). This knowledge is especially important for organizations that largely rely on employees’ strategic behavior, which requires intensive mental resources (Zyphur et al., 2007). This is borne out in our medical context, where doctors and nurses depleted from psychological contract violation are likely to make poorer

decisions for their clients. They may even be less vigilant when dealing with life or death situations due to impaired resources. A case in point is the participants in Study 2 working in the ICU. There is no question that their decisions relating to treatment or care directly influence a patient's chances of survival. According to our research, such chances could be compromised when medical employees are drained by dealing with contract violation. In fact, medical research published in *The Lancet* shows that tiredness is a major reason for prescribing errors among doctors (e.g., Dean, Schachter, Vincent, & Barber, 2002). Because the consequences of poor decisions in a medical context may be more profound than in other organizations or occupations, it is essential for hospital management to ensure that promises are delivered and to take steps to mitigate the effects of violation on resource depletion in the unfortunate event that a psychological contract is violated.

Also, this research challenges the conventional wisdom and demonstrates that organizational identification is not a buffer against the negative consequences of contract violation. It would be naïve for organizations to rely on employees' identification as a substitute for making good on their promises or as a safety net to dampen the effects of violation. As much as organizations would like to heed this advice, they may find it impossible to keep all the promises made to employees. One important question, therefore, is how to manage negative consequences after violation occurs. Our research suggests that organizations should be aware of employees' resource level and take measures to help them retain resources. A reactive approach would involve explaining to employees why a promise has been broken and apologizing, if the organization is at fault. Doing so will help employees make sense of their negative experiences and reduce the resources needed to process them. Additionally, organizations could take a more proactive approach by enhancing general resource capacity. For example, giving employees job autonomy can replenish their resources and counteract the effects of resource depletion (Troughakos, Hideg, Cheng, & Beal, 2014).

Limitations and Future Research Directions

A key strength of the present research is its use of multiple studies with different designs and samples. Also, the implications of violation for third parties were constructively replicated by using two forms of outcome variables directed at different targets. The interesting opposing moderating effects of organizational and professional identification on the relationship between psychological contract violation and resource depletion further validate the resource-based mechanism proposed (Baron & Kenny, 1986). That said, this research has a number of limitations. First, the overall model was examined only in medical contexts. We do not know whether our findings would hold true for different professions. It would be useful, therefore, for future research to test our model in other settings. Second, our research was conducted within a single culture in China. However, we note that our core theorizing is not tied to any specific cultural issues and previous research has established the validity of COR theory in the Chinese context (Lam, Huang, & Janssen, 2010). Third, each of the three studies conducted has its own design-related limitations. However, the limitations of one study were offset by the others' strengths. For example, while psychological contract violation and resource depletion were self-reported at the same time point in Study 2, Study 1 (based on an experiment) and Study 3 (a time-lagged design) replicated this main effect. Outcomes were evaluated by employees themselves in Study 3, while Study 2 utilized supervisor ratings and yielded consistent findings.

Our research also identifies several fruitful directions for future work. First, following the resource-based perspective proposed in the current research, it is possible that psychological contract violation may affect outcomes outside workplaces by determining the availability of resources. For example, psychological contract violation may give rise to incivility toward family members (e.g., spouse) because employees who feel drained by violation may find it more difficult to control their temper at home. Drained by violation,

these employees may additionally struggle to manage their work-life balance, which also requires mental resources. They have less resource capacity to manage responsibilities in both domains and thus experience more work-life conflict. This goes beyond the explanatory capacity of social exchange theory and merits future research.

Second, our research found that organizational identification, a positive attitude, exacerbates the deleterious effect of psychological contract violation on resource depletion. Extrapolating from this point of view, it would be interesting to investigate how negative forms of organizational practices interact with violation on regulatory resources. For example, abusive supervision has been found to have a depleting main effect (Thau & Mitchell, 2010). According to our model, it may weaken the association between violation and resource depletion because it provides employees with an easy way to make sense of why a promise has been violated. Doing so could help better understand the sense-making processes triggered by contract violation. We hope that our findings encourage such future research enmeshed within the resource-based framework.

Third, we have established vitality as a useful resource-based mediator for the third-party implications of psychological contract violation and used its inverse to capture resource depletion. While this practice is theoretically sound and is supported by previous research (Moller et al., 2006), our theorizing suggests that other resource-related measures, such as fatigue and emotional exhaustion, may also be capable of mediating this process. However, we note that, because these alternative measures capture more severe depletion states (Shirom, Nirel, & Vinokur, 2006), future research could examine the conditions under which psychological contract violation is related to fatigue and exhaustion. For example, using a longitudinal design, future research could uncover whether it takes a single violation episode or the accumulation of continued violation to trigger more intense forms of depletion.

Finally, although we have pointed out that the basic tenet of our theoretical framework

should be culturally generalizable, culture may shape the strength of the social exchange account and the resource-based account in subtle and yet different ways. In a culture characterized by high collectivism and power distance such as China, there exist norms that delegitimize retaliation against authorities and groups (Hofstede, 2001). We conjecture that the tendency to develop revenge cognitions when experiencing psychological contract violation may be stifled to some extent and be weaker in East Asian culture than in Western culture. In fact, previous research has found that employees' attitudes toward their organization were less contingent upon organizational treatment if they endorsed power distance and traditionality (Farh, Hackett, & Liang, 2007). However, we argue that resource depletion in response to psychological violation may be less susceptible to cultural influence because it seems universal to feel bad when betrayed by one's organization and to engage in self-regulation to deal with a negative experience. The resource-based mechanism is therefore likely to be the prevailing account in East Asian culture that can explain the consequences of violation for both organizational and non-organizational outcomes. On the other hand, the social exchange mechanism may work in parallel with the resource-based mechanism in Western culture, particularly when predicting organization-directed behaviors. Multicultural studies need to be conducted to test this interesting possibility.

Conclusion

Social exchange theory is an important framework accounting for retaliatory behaviors against organizations when they violate employees' psychological contracts. Based on COR theory and three empirical studies, we establish that resource depletion is an alternative and complementary lens to explain why employee psychological contract violation affects outcomes for parties not directly responsible for the violation (i.e., coworkers and clients). The consideration of both COR theory and social exchange theory paints a more comprehensive picture of when employees may involuntarily behave in a

counter-normative manner as well as a purposeful directed manner in coping and responding to their experience of psychological contract violation.

References

- Abrams, D., & Hogg, M.A. (1988). Comments on the motivational status of self-esteem in social identity and intergroup discrimination. *European Journal of Social Psychology*, 18, 317-334.
- Aiken, L.S., & West, S.G. (1991). *Multiple regression: Testing and interpreting interactions*: Newbury Park, CA: Sage.
- Ashforth, B.E., & Humphrey, R.H. (1993). Emotional labor in service roles: The influence of identity. *Academy of Management Review*, 18, 88-115.
- Ashforth, B.E., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review*, 14, 20-39.
- Axelrod, R. (1984). *The evolution of cooperation*. New York: Wiley.
- Bakker, A.B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology*, 22, 309-328.
- Bamber, E.M., & Iyer, V.M. (2002). Big 5 auditors' professional and organizational identification: Consistency or conflict? *Auditing: A Journal of Practice & Theory*, 21, 21-38.
- Baranik, L.E., Wang, M., Gong, Y., & Shi, J. (in press). Customer mistreatment, employee health, and job performance cognitive rumination and social sharing as mediating mechanisms. *Journal of Management*.
- Baron, R.M., & Kenny, D.A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal*

of Personality and Social Psychology, 51, 1173-1182.

Barrett, L.F., Gross, J., Christensen, T.C., & Benvenuto, M. (2001). Knowing what you're feeling and knowing what to do about it: Mapping the relation between emotion differentiation and emotion regulation. *Cognition & Emotion*, 15, 713-724.

Baumeister, R.F., Stillwell, A., & Wotman, S.R. (1990). Victim and perpetrator accounts of interpersonal conflict: Autobiographical narratives about anger. *Journal of Personality and Social Psychology*, 59, 994-1005.

Beal, D.J., Weiss, H.M., Barros, E., & MacDermid, S.M. (2005). An episodic process model of affective influences on performance. *Journal of Applied Psychology*, 90, 1054-1068.

Becker, T.E. (2005). Potential problems in the statistical control of variables in organizational research: A qualitative analysis with recommendations. *Organizational Research Methods*, 8, 274-289.

Bickel, R. (2007). *Multilevel analysis for applied research: It's just regression!* New York: Wiley.

Blau, P.M. (1964). *Exchange and power in social life*. New York: Wiley.

Bordia, P., Restubog, S.L.D., Bordia, S., & Tang, R.L. (2010). Breach begets breach: Trickle-down effects of psychological contract breach on customer service. *Journal of Management*, 36, 1578-1607.

Bordia, P., Restubog, S.L.D., & Tang, R.L. (2008). When employees strike back: Investigating mediating mechanisms between psychological contract breach and

- workplace deviance. *Journal of Applied Psychology*, 93, 1104-1117.
- Bradfield, M., & Aquino, K. (1999). The effects of blame attributions and offender likableness on forgiveness and revenge in the workplace. *Journal of Management*, 25, 607-631.
- Brewer, M.B. (1979). In-group bias in the minimal intergroup situation: A cognitive-motivational analysis. *Psychological Bulletin*, 86, 307-324.
- Brislin, R.W. (1980). Translation and content analysis of oral and written material. In H. C. Triandis & J. W. Berry (Eds.), *Handbook of cross-cultural psychology* (pp. 349-444). Boston: Allyn & Bacon.
- Brotheridge, C.M., & Grandey, A.A. (2002). Emotional labor and burnout: Comparing two perspectives of “people work”. *Journal of Vocational Behavior*, 60, 17-39.
- Budescu, D.V. (1993). Dominance analysis: A new approach to the problem of relative importance of predictors in multiple regression. *Psychological bulletin*, 114(3), 542-551.
- Byrne, B.M. (2012). *Structural equation modeling with mplus: Basic concepts, applications, and programming*. New York, NY: Wiley.
- Chaiken, S., & Eagly, A.H. (1989). Heuristic and systematic information processing within and beyond the persuasion context. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 212-252). New York: Guilford Press.
- Chen, Z.X., Tsui, A.S., & Zhong, L. (2008). Reactions to psychological contract breach: A dual perspective. *Journal of Organizational Behavior*, 29, 527-548.

- Chi, S.-C.S., & Liang, S.-G. (2013). When do subordinates' emotion-regulation strategies matter? Abusive supervision, subordinates' emotional exhaustion, and work withdrawal. *The Leadership Quarterly*, 24, 125-137.
- Christian, M.S., & Ellis, A.P. (2011). Examining the effects of sleep deprivation on workplace deviance: A self-regulatory perspective. *Academy of Management Journal*, 54, 913-934.
- Ciarocco, N., Twenge, J., Muraven, M., & Tice, D. (2007). The state self-control capacity scale: Reliability, validity, and correlations with physical and psychological stress. *Poster presented at the annual meeting of the Society for Personality and Social Psychology, San Diego, CA.* .
- Clark, M.S., & Mills, J. (1979). Interpersonal attraction in exchange and communal relationships. *Journal of Personality and Social Psychology*, 37, 12-24.
- Cole, M.S., Bernerth, J.B., Walter, F., & Holt, D.T. (2010). Organizational justice and individuals' withdrawal: Unlocking the influence of emotional exhaustion. *Journal of Management Studies*, 47, 367-390.
- Conway, N., Kiefer, T., Hartley, J., & Briner, R.B. (2014). Doing more with less? Employee reactions to psychological contract breach via target similarity or spillover during public sector organizational change. *British Journal of Management*, 25, 737-754.
- Cortina, L.M., Magley, V.J., Williams, J.H., & Langhout, R.D. (2001). Incivility in the workplace: Incidence and impact. *Journal of Occupational Health Psychology*, 6, 64-80.

- De Jonge, J., & Dormann, C. (2006). Stressors, resources, and strain at work: A longitudinal test of the triple-match principle. *Journal of Applied Psychology, 91*, 1359-1374.
- Dean, B., Schachter, M., Vincent, C., & Barber, N. (2002). Causes of prescribing errors in hospital inpatients: A prospective study. *The Lancet, 359*(9315), 1373-1378.
- Deery, S.J., Iverson, R.D., & Walsh, J.T. (2006). Toward a better understanding of psychological contract breach: A study of customer service employees. *Journal of Applied Psychology, 91*, 166-175.
- Demerouti, E., Bakker, A.B., & Bulters, A.J. (2004). The loss spiral of work pressure, work-home interference and exhaustion: Reciprocal relations in a three-wave study. *Journal of Vocational Behavior, 64*, 131-149.
- Deng, H., Wu, C.-H., Leung, K., & Guan, Y. (2016). Depletion from self-regulation: A resource-based account of the effect of value incongruence. *Personnel Psychology, 69*, 431-465.
- Denson, T.F., Pedersen, W.C., Friese, M., Hahm, A., & Roberts, L. (2011). Understanding impulsive aggression: Angry rumination and reduced self-control capacity are mechanisms underlying the provocation-aggression relationship. *Personality and Social Psychology Bulletin, 37*, 850-862.
- DeWall, C.N., & Baumeister, R.F. (2006). Alone but feeling no pain: Effects of social exclusion on physical pain tolerance and pain threshold, affective forecasting, and interpersonal empathy. *Journal of Personality and Social Psychology, 91*, 1-15.
- Diestel, S., Cosmar, M., & Schmidt, K.-H. (2013). Burnout and impaired cognitive

- functioning: The role of executive control in the performance of cognitive tasks. *Work & Stress*, 27, 164-180.
- Edwards, J.R., & Lambert, L.S. (2007). Methods for integrating moderation and mediation: A general analytical framework using moderated path analysis. *Psychological Methods*, 12, 1-22.
- Farh, J.-L., Hackett, R.D., & Liang, J. (2007). Individual-level cultural values as moderators of perceived organizational support–employee outcome relationships in china: Comparing the effects of power distance and traditionality. *Academy of Management Journal*, 50, 715-729.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Palo Alto, CA: Stanford University Press.
- Fritz, C., Lam, C.F., & Spreitzer, G.M. (2011). It's the little things that matter: An examination of knowledge workers' energy management. *The Academy of Management Perspectives*, 25, 28-39.
- Gao, H., Zhang, Y., Wang, F., Xu, Y., Hong, Y.-Y., & Jiang, J. (2014). Regret causes ego-depletion and finding benefits in the regrettable events alleviates ego-depletion. *The Journal of General Psychology*, 141, 169-206.
- Gouldner, A.W. (1960). The norm of reciprocity: A preliminary statement. *American sociological review*, 161-178.
- Greenbaum, R.L., Quade, M.J., Mawritz, M.B., Kim, J., & Crosby, D. (2014). When the customer is unethical: The explanatory role of employee emotional exhaustion onto

- work–family conflict, relationship conflict with coworkers, and job neglect. *Journal of Applied Psychology*, 99, 1188-1203.
- Halbesleben, J.R. (2006). Sources of social support and burnout: A meta-analytic test of the conservation of resources model. *Journal of Applied Psychology*, 91, 1134-1145.
- Halbesleben, J.R. (2010). The role of exhaustion and workarounds in predicting occupational injuries: A cross-lagged panel study of health care professionals. *Journal of Occupational Health Psychology*, 15, 1-16.
- Halbesleben, J.R., & Bowler, W.M. (2007). Emotional exhaustion and job performance: The mediating role of motivation. *Journal of Applied Psychology*, 92, 93-106.
- Halbesleben, J.R., Harvey, J., & Bolino, M.C. (2009). Too engaged? A conservation of resources view of the relationship between work engagement and work interference with family. *Journal of Applied Psychology*, 94, 1452-1465.
- Halbesleben, J.R., Neveu, J.-P., Paustian-Underdahl, S.C., & Westman, M. (2014). Getting to the “cor” understanding the role of resources in conservation of resources theory. *Journal of Management*, 40, 1334-1364.
- Hekman, D.R., Bigley, G.A., Steensma, H.K., & Hereford, J.F. (2009). Combined effects of organizational and professional identification on the reciprocity dynamic for professional employees. *Academy of Management Journal*, 52, 506-526.
- Hekman, D.R., Steensma, H.K., Bigley, G.A., & Hereford, J.F. (2009). Effects of organizational and professional identification on the relationship between administrators’ social influence and professional employees’ adoption of new work

- behavior. *Journal of Applied Psychology*, 94, 1325-1335.
- Hobfoll, S.E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44, 513-524.
- Hobfoll, S.E., & Freedy, J. (1993). Conservation of resources: A general stress theory applied to burnout. In W. B. Schaufeli, C. Maslach & T. Marek (Eds.), *Professional burnout: Recent developments in theory and research* (pp. 115-129). Washington, DC: Taylor & Francis.
- Hobfoll, S.E., & Shirom, A. (2001). Conservation of resources theory: Applications to stress and management in the workplace. In R. Golembiewski (Ed.), *Handbook of organizational behavior* (pp. 57–80). New York: Marcel Dekker.
- Hofstede, G.H. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*. London: Sage Publications.
- Ingram, K.E. (2015). *Always on my mind: The impact of relational ambivalence on rumination upon supervisor mistreatment*. Paper presented at the Academy of Management Proceedings.
- Jetten, J., Spears, R., & Manstead, A.S. (1996). Intergroup norms and intergroup discrimination: Distinctive self-categorization and social identity effects. *Journal of Personality and Social Psychology*, 71, 1222.
- Kramer, R.M., Brewer, M.B., & Hanna, B.A. (1996). Collective trust and collective action: The decision to trust as a social decision. Rm kramer. In R. M. Kramer & T. R. Tyler (Eds.), *Trust in organizations: Frontiers of theory and research* (pp. 357–389).

Thousand Oaks, CA: Sage.

- Lam, C.K., Huang, X., & Janssen, O. (2010). Contextualizing emotional exhaustion and positive emotional display: The signaling effects of supervisors' emotional exhaustion and service climate. *Journal of Applied Psychology, 95*, 368-376.
- Lam, C.K., Van der Vegt, G.S., Walter, F., & Huang, X. (2011). Harming high performers: A social comparison perspective on interpersonal harming in work teams. *Journal of Applied Psychology, 96*, 588-601.
- Lavelle, J.J., Rupp, D.E., & Brockner, J. (2007). Taking a multifoci approach to the study of justice, social exchange, and citizenship behavior: The target similarity model? *Journal of Management, 33*, 841-866.
- Lazarus, R.S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Lee, K., Kim, E., Bhawe, D.P., & Duffy, M.K. (2016). Why victims of undermining at work become perpetrators of undermining: An integrative model. *Journal of Applied Psychology, 101*, 915-924.
- Lee, R.T., & Ashforth, B.E. (1996). A meta-analytic examination of the correlates of the three dimensions of job burnout. *Journal of Applied Psychology, 81*, 123-133.
- Leunissen, J.M., De Cremer, D., Reinders Folmer, C.P., & Van Dijke, M. (2013). The apology mismatch: Asymmetries between victim's need for apologies and perpetrator's willingness to apologize. *Journal of Experimental Social Psychology, 49*, 315-324.
- Lian, H., Brown, D., Ferris, D.L., Liang, L., Keeping, L., & Morrison, R. (2014). Abusive supervision and retaliation: A self-control framework. *Academy of Management*

Journal, 57, 116-138.

Linden, D.V.D., Keijsers, G.P., Eling, P., & Schaijk, R.V. (2005). Work stress and attentional difficulties: An initial study on burnout and cognitive failures. *Work & Stress*, 19, 23-36.

Liu, Y., Wang, M., Chang, C.-H., Shi, J., Zhou, L., & Shao, R. (2015). Work–family conflict, emotional exhaustion, and displaced aggression toward others: The moderating roles of workplace interpersonal conflict and perceived managerial family support. *Journal of Applied Psychology*, 100, 793-803.

Mael, F., & Ashforth, B.E. (1992). Alumni and their alma mater: A partial test of the reformulated model of organizational identification. *Journal of Organizational Behavior*, 13, 103-123.

Mann, L., Burnett, P., Radford, M., & Ford, S. (1997). The melbourne decision making questionnaire: An instrument for measuring patterns for coping with decisional conflict. *Journal of Behavioral Decision Making*, 10, 1-19.

Moller, A.C., Deci, E.L., & Ryan, R.M. (2006). Choice and ego-depletion: The moderating role of autonomy. *Personality and Social Psychology Bulletin*, 32, 1024-1036.

Morrison, E.W., & Robinson, S.L. (1997). When employees feel betrayed: A model of how psychological contract violation develops. *Academy of Management Review*, 22, 226-256.

Muraven, M., Gagné, M., & Rosman, H. (2008). Helpful self-control: Autonomy support, vitality, and depletion. *Journal of Experimental Social Psychology*, 44, 573-585.

- Orvis, K.A., Dudley, N.M., & Cortina, J.M. (2008). Conscientiousness and reactions to psychological contract breach: A longitudinal field study. *Journal of Applied Psychology, 93*, 1183-1193.
- Parzefall, M.-R., & Coyle-Shapiro, J.A. (2011). Making sense of psychological contract breach. *Journal of Managerial Psychology, 26*, 12-27.
- Podsakoff, P.M., Ahearne, M., & MacKenzie, S.B. (1997). Organizational citizenship behavior and the quantity and quality of work group performance. *Journal of Applied Psychology, 82*, 262-270.
- Preacher, K.J., Zyphur, M.J., & Zhang, Z. (2010). A general multilevel sem framework for assessing multilevel mediation. *Psychological Methods, 15*, 209-233.
- Pyszczynski, T.A., & Greenberg, J. (1981). Role of disconfirmed expectancies in the instigation of attributional processing. *Journal of Personality and Social Psychology, 40*, 31-38.
- Rafaeli, A., Erez, A., Ravid, S., Derfler-Rozin, R., Treister, D.E., & Scheyer, R. (2012). When customers exhibit verbal aggression, employees pay cognitive costs. *Journal of Applied Psychology, 97*, 931-950.
- Restubog, S.L.D., Bordia, P., & Bordia, S. (2009). The interactive effects of procedural justice and equity sensitivity in predicting responses to psychological contract breach: An interactionist perspective. *Journal of Business and Psychology, 24*, 165-178.
- Restubog, S.L.D., Hornsey, M.J., Bordia, P., & Esposito, S.R. (2008). Effects of psychological contract breach on organizational citizenship behaviour: Insights from the group value

- model. *Journal of Management Studies*, 45, 1377-1400.
- Restubog, S.L.D., Zagenczyk, T.J., Bordia, P., Bordia, S., & Chapman, G.J. (2015). If you wrong us, shall we not revenge? Moderating roles of self-control and perceived aggressive work culture in predicting responses to psychological contract breach. *Journal of Management*, 41, 1132-1154.
- Robinson, S.L. (1996). Trust and breach of the psychological contract. *Administrative Science Quarterly*, 41, 574-599.
- Robinson, S.L., & Morrison, E.W. (2000). The development of psychological contract breach and violation: A longitudinal study. *Journal of Organizational Behavior*, 21, 525-546.
- Rousseau, D.M. (1989). Psychological and implied contracts in organizations. *Employee Responsibilities and Rights Journal*, 2, 121-139.
- Rupp, D.E., & Cropanzano, R. (2002). The mediating effects of social exchange relationships in predicting workplace outcomes from multifoci organizational justice. *Organizational Behavior and Human Decision Processes*, 89, 925-946.
- Ryan, R.M., & Deci, E.L. (2008). From ego depletion to vitality: Theory and findings concerning the facilitation of energy available to the self. *Social and Personality Psychology Compass*, 2, 702-717.
- Ryan, R.M., & Frederick, C. (1997). On energy, personality, and health: Subjective vitality as a dynamic reflection of well-being. *Journal of Personality*, 65, 529-565.
- Schmader, T., & Johns, M. (2003). Converging evidence that stereotype threat reduces working memory capacity. *Journal of Personality and Social Psychology*, 85,

440-452.

Sedek, G., Kofta, M., & Tyszka, T. (1993). Effects of uncontrollability on subsequent decision making: Testing the cognitive exhaustion hypothesis. *Journal of Personality and Social Psychology*, 65, 1270-1281.

Settles, I.H. (2004). When multiple identities interfere: The role of identity centrality. *Personality and Social Psychology Bulletin*, 30, 487-500.

Shirom, A., Nirel, N., & Vinokur, A.D. (2006). Overload, autonomy, and burnout as predictors of physicians' quality of care. *Journal of Occupational Health Psychology*, 11, 328-342.

Spector, P.E., & Fox, S. (2005). A model of counterproductive work behavior. In S. Fox & P. E. Spector (Eds.), *Counterproductive workplace behavior: Investigations of actors and targets* (pp. 151-174). Washington, DC: APA.

Sturman, M.C. (2003). Searching for the inverted u-shaped relationship between time and performance: Meta-analyses of the experience/performance, tenure/performance, and age/performance relationships. *Journal of Management*, 29, 609-640.

Tajfel, H., & Turner, J.C. (1986). The social identity theory of intergroup behavior. In S. W. W. Austin (Ed.), *Psychology of intergroup relation* (pp. 7-24). Chicago: Nelson Hall.

Ten Brummelhuis, L.L., & Bakker, A.B. (2012). A resource perspective on the work–home interface: The work–home resources model. *American Psychologist*, 67, 545-556.

Thau, S., & Mitchell, M.S. (2010). Self-gain or self-regulation impairment? Tests of competing explanations of the supervisor abuse and employee deviance relationship

- through perceptions of distributive justice. *Journal of Applied Psychology*, 95, 1009-1031.
- Trougakos, J.P., Hideg, I., Cheng, B.H., & Beal, D.J. (2014). Lunch breaks unpacked: The role of autonomy as a moderator of recovery during lunch. *Academy of Management Journal*, 57, 405-421.
- Tyler, T.R., & Blader, S.L. (2005). Can businesses effectively regulate employee conduct? The antecedents of rule following in work settings. *Academy of Management Journal*, 48, 1143-1158.
- Wan, E.W., & Agrawal, N. (2011). Carryover effects of self-control on decision making: A construal-level perspective. *Journal of Consumer Research*, 38, 199-214.
- Wang, Q., Bowling, N.A., Tian, Q.-t., Alarcon, G.M., & Kwan, H.K. (in press). Workplace harassment intensity and revenge: Mediation and moderation effects. *Journal of Business Ethics*.
- Weinstein, N., & Ryan, R.M. (2010). When helping helps: Autonomous motivation for prosocial behavior and its influence on well-being for the helper and recipient. *Journal of Personality and Social Psychology*, 98, 222-244.
- Wheeler, A.R., Halbesleben, J.R., & Whitman, M.V. (2013). The interactive effects of abusive supervision and entitlement on emotional exhaustion and co-worker abuse. *Journal of Occupational and Organizational Psychology*, 86, 477-496.
- Wilk, S.L., & Moynihan, L.M. (2005). Display rule "regulators": The relationship between supervisors and worker emotional exhaustion. *Journal of Applied Psychology*, 90,

917-927.

Wong, P.T., & Weiner, B. (1981). When people ask "why" questions, and the heuristics of attributional search. *Journal of Personality and Social Psychology*, 40, 650-663.

Zhang, Z., & Peterson, S.J. (2011). Advice networks in teams: The role of transformational leadership and members' core self-evaluations. *Journal of Applied Psychology*, 96, 1004-1017.

Zhao, H., Wayne, S.J., Glibkowski, B.C., & Bravo, J. (2007). The impact of psychological contract breach on work-related outcomes: A meta-analysis. *Personnel Psychology*, 60, 647-680.

Zhou, L., Wang, M., Chen, G., & Shi, J. (2012). Supervisors' upward exchange relationships and subordinate outcomes: Testing the multilevel mediation role of empowerment. *Journal of Applied Psychology*, 97, 668-680.

Zyphur, M.J., Warren, C.R., Landis, R.S., & Thoresen, C.J. (2007). Self-regulation and performance in high-fidelity simulations: An extension of ego-depletion research. *Human Performance*, 20, 103-118.

Table 1

Means, Standard Deviations, and Correlations (Study 2)

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. Gender ^a	0.78	0.41	-										
2. Tenure	9.90	9.05	-.10	-									
3. Education ^b	1.36	0.56	-.19**	.13*	-								
4. Occupation ^c	0.44	0.50	-.20**	.12*	.74**	-							
5. Psychological contract violation	2.29	1.01	-.04	-.13*	-.05	.12*	-						
6. Resource depletion	2.24	0.87	.04	-.07	.13*	.17**	.45**	-					
7. Revenge cognitions	1.71	0.77	.01	-.06	-.01	.09	.59**	.41**	-				
8. Organizational identification	4.70	0.82	-.05	.10	-.03	-.09	-.51**	-.60**	-.54**	-			
9. Professional identification	4.65	0.82	-.06	.09	-.09	-.10	-.36**	-.58**	-.36**	.77**	-		
10. Interpersonal harming	1.50	0.55	.06	.06	-.04	.02	.10	.13*	-.01	-.11*	-.10	-	
11. Decision-making vigilance	4.44	0.95	-.09	.13*	-.01	.00	.01	-.15*	-.12*	.15**	.09	-.17**	-

Note. * $p < .05$; and ** $p < .01$.

^a 0 = male and 1 = female.

^b 1 = associate degree, 2 = undergraduate degree, 3 = postgraduate degree.

^c 0 = nurses and 1 = doctors.

Table 2

Results for CFAs and Model Comparisons (Study 2)

	χ^2	df	CFI	RMSEA	SRMR
Expected seven-factor model	1084.99	539	.90	.06	.05
Six-factor model combining RD and RC	1533.62	545	.81	.08	.09
Six-factor model combining OI and PI	1210.26	545	.87	.07	.06
Six-factor model coming IH and DMV	1281.54	545	.86	.07	.07
Two-factor model	2719.86	559	.59	.12	.11

Note. RD = resource depletion, RC = revenge cognitions, OI = organizational identification, PI = professional identification, IH = interpersonal harming, DMV = decision-making vigilance.

Table 3

Random Coefficient Results for Mediation and Moderated Mediation Hypotheses (Study 2)

	Resource depletion		Revenge cognitions	Interpersonal harming			Decision-making vigilance		
Predictor	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
PCV	.44(.05)**	.21(.05)**	.59(.05)**	.00(.05)	.05(.06)	.02(.06)	.07(.06)	.08(.07)	.12(.07)
OI		-.31(.07)**							
PI		-.26(.07)**							
PCV × OI		.15(.06)**							
PCV × PI		-.15(.07)*							
Resource depletion				.10(.05)*		.11(.05)*	-.17(.06)**		-.15(.06)*
Revenge cognitions					-.02(.06)	-.04(.06)		-.14(.07)*	-.11(.07)
R_1^2	.23	.46	.36	.03	.02	.03	.05	.04	.06
$\Delta\chi^2$	135.40** (Models 1–2)				.46 (Models 4–6) 4.26* (Models 5–6)			2.58 (Models 7–9) 6.51* (Models 8–9)	

Note. Unstandardized coefficients are reported. Standard errors are reported in parentheses.

PCV = psychological contract violation, OI = organizational identification, and PI = professional identification.

* $p < .05$; ** $p < .01$.

Table 4

Means, Standard Deviations, and Correlations (Study 3)

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Gender ^a	0.79	0.41	-												
2. Tenure	6.19	6.85	.04	-											
3. Education ^b	1.67	0.69	-.06	.11	-										
4. Occupation ^c	0.45	0.50	-.31**	.10	.25**	-									
4. Psychological contract violation	2.09	0.85	-.01	.13*	-.05	.01	-								
5. Resource depletion	2.28	0.81	.04	.21**	.13	.03	.30**	-							
6. Revenge cognitions	1.65	0.63	.04	-.16*	-.03	-.02	.65**	.41**	-						
7. Organizational identification	4.94	0.69	-.08	-.03	.08	.08	-.43**	-.28**	-.38**	-					
8. Professional identification	4.82	0.72	.01	-.01	.03	.00	-.31**	-.25**	-.29**	.78**	-				
9. Interpersonal harming	1.21	0.32	-.16*	.12	.11	.08	.23**	.33**	.24**	-.14*	-.15*	-			
10. Decision-making vigilance	4.80	0.81	-.09	-.09	.00	.08	-.25**	-.46**	-.30**	.28**	.27**	-.24**	-		
11. Civic virtue	4.05	0.93	-.09	-.06	-.05	.03	-.32**	-.45**	-.38**	.33**	.29**	-.27**	.53**	-	
12. Organizational rule compliance	5.45	0.58	.06	-.12	.02	-.04	-.35**	-.32**	-.38**	.37**	.33**	-.32**	.49**	.45**	-

Note. * $p < .05$; and ** $p < .01$.^a 0 = male and 1 = female.^b 1 = associate degree, 2 = undergraduate degree, 3 = postgraduate degree.^c 0 = nurses and 1 = doctors.

Table 5

Results for CFAs and Model Comparisons (Study 3)

	χ^2	df	CFI	RMSEA	SRMR
Expected nine-factor model	1386.06	783	.91	.06	.06
Eight-factor model combining RD and RC	2113.07	791	.79	.10	.09
Eight-factor model combining OI and PI	1417.57	791	.90	.07	.06
Seven-factor model	1778.83	798	.85	.08	.07
Two-factor model	4020.86	818	.50	.15	.13

Note. RD = resource depletion, RC = revenge cognitions, OI = organizational identification, PI = professional identification.

Table 6

Random Coefficient Results for Mediation and Moderated Mediation Hypotheses (Study 3)

	Resource depletion		Revenge cognitions	Interpersonal harming			Decision-making vigilance		
Predictor	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
PCV	.27(.06)**	.23(.07)**	.62(.05)**	.09(.04)	.08(.06)	.07(.05)	-.13(.06)*	-.10(.08)	-.07(.07)
OI		-.10(.10)**							
PI		-.08(.09)**							
PCV × OI		.24(.10)*							
PCV × PI		-.20(.10)*							
Resource depletion				.20(.04)**		.19(.05)*	-.40(.06)**		-.38(.06)**
Revenge cognitions					.11(.06)	.04(.06)		-.22(.08)**	-.09(.08)
R_1^2	.09	.17	.43	.09	.02	.12	.23	.09	.23
$\Delta\chi^2$	12.40** (Models 1–2)				.57 (Models 4–6)			1.36 (Models 7–9)	
					15.56** (Models 5–6)			36.45** (Models 8–9)	

	Civic virtue			Organizational rule compliance		
Predictor	Model 10	Model 11	Model 12	Model 13	Model 14	Model 15
PCV	-.20(.06)**	-.13 (.08)	-.10(.07)	-.25(.06)**	-.16(.07)*	-.15(.07)*
Resource depletion	-.41(.06)**		-.37(.06)**	-.22(.06)**		-.18(.06)**
Revenge cognitions		-.29(.08)**	-.16(.08)*		-.25(.08)**	-.19(.08)*
R_1^2	.24	.14	.25	.16	.16	.19
$\Delta\chi^2$	4.16* (Models 10–12)			5.77* (Models 13–15)		
	30.65** (Models 11–12)			7.91** (Models 14–15)		

Note. Unstandardized coefficients are reported. Standard errors are reported in parentheses.

PCV = psychological contract violation, OI = organizational identification, PI = professional identification.

* $p < .05$; and ** $p < .01$.

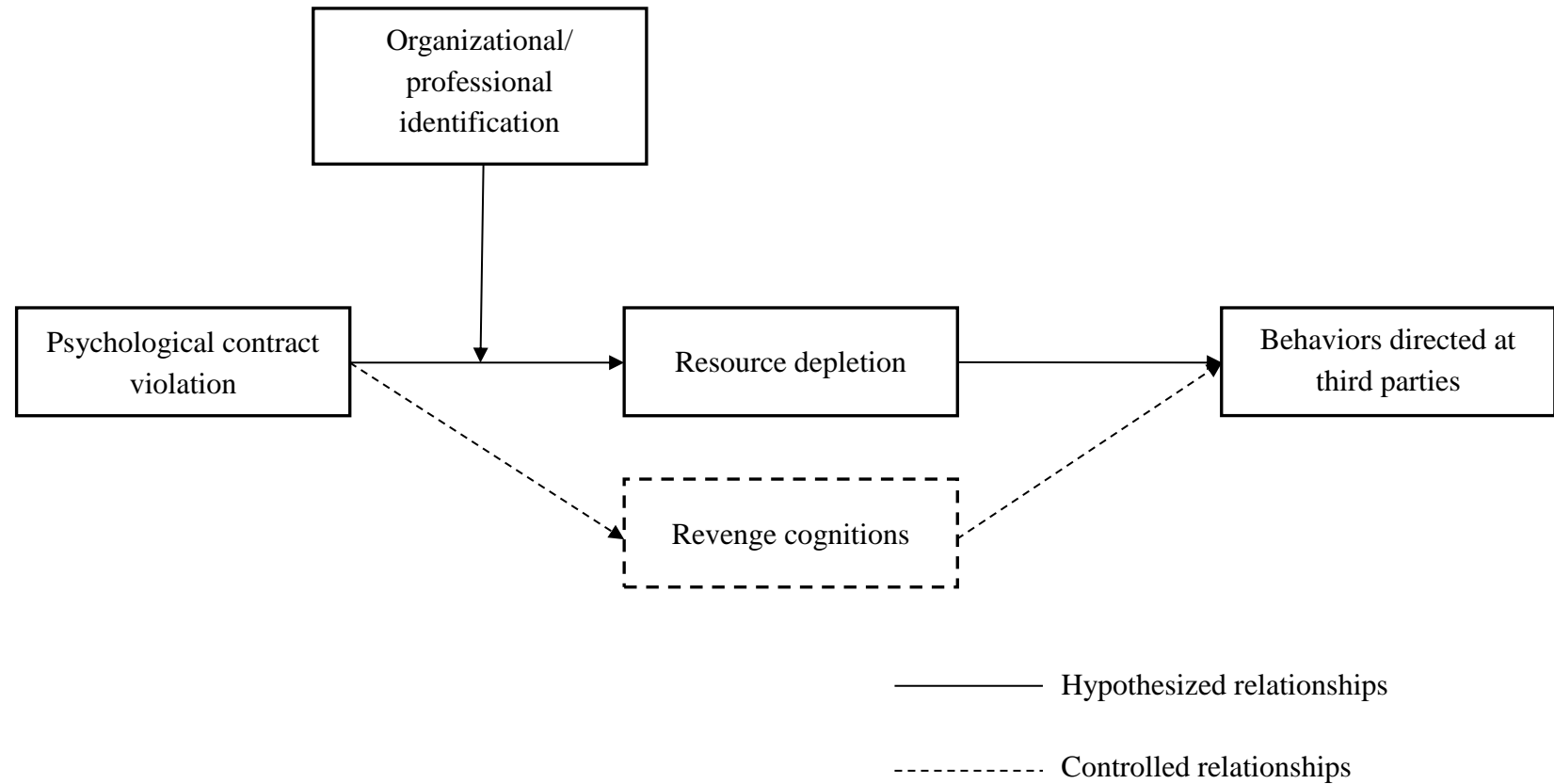


Figure 1. The Overall Conceptual Model

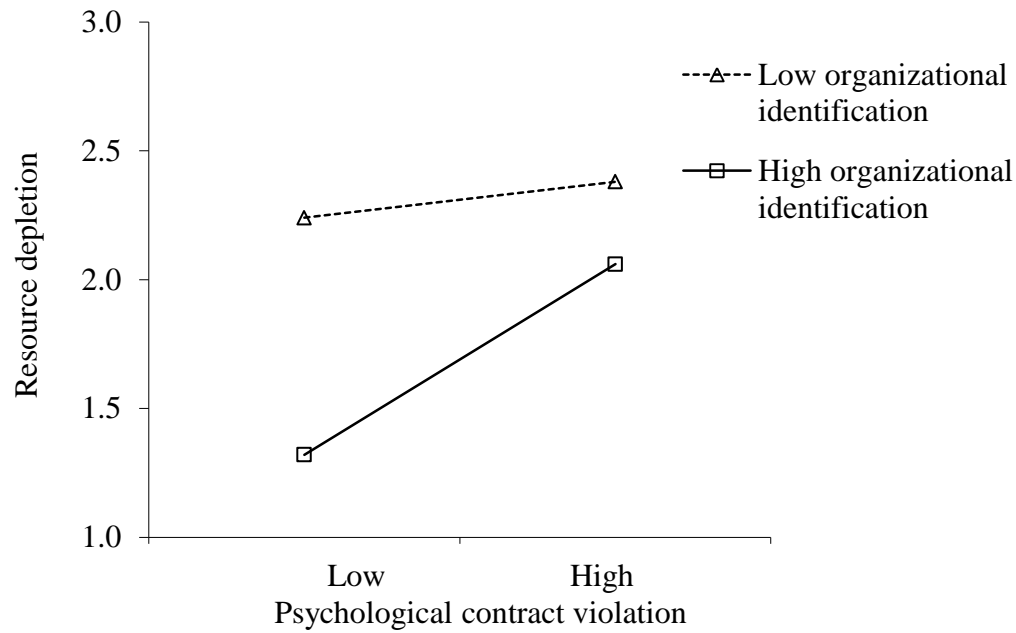


Figure 2a. Interaction between Psychological Contract Violation and Organizational Identification on Resource Depletion (Study 2)

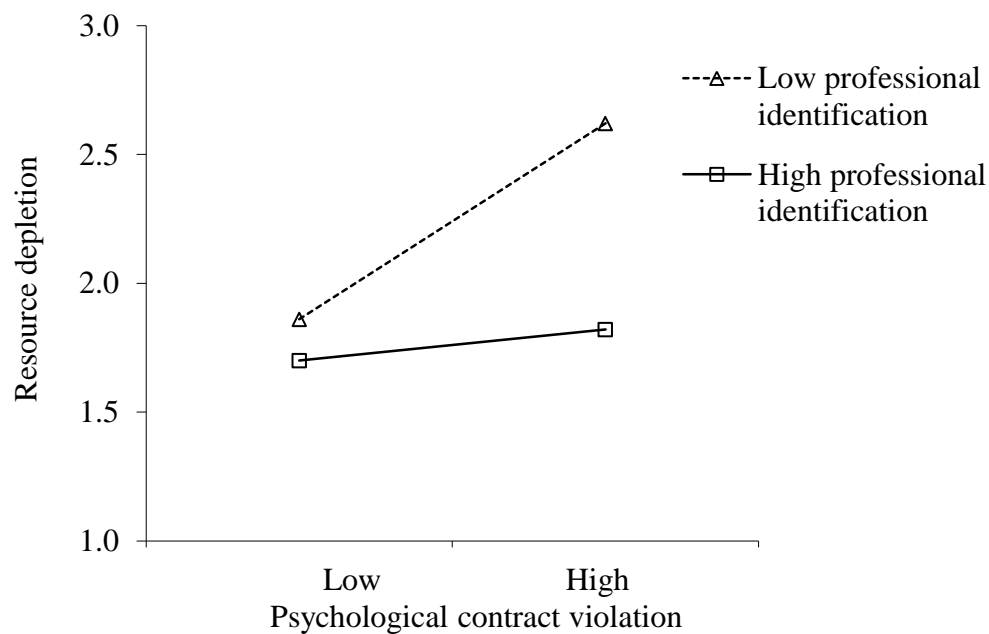


Figure 2b. Interaction between Psychological Contract Violation and Professional Identification on Resource Depletion (Study 2)

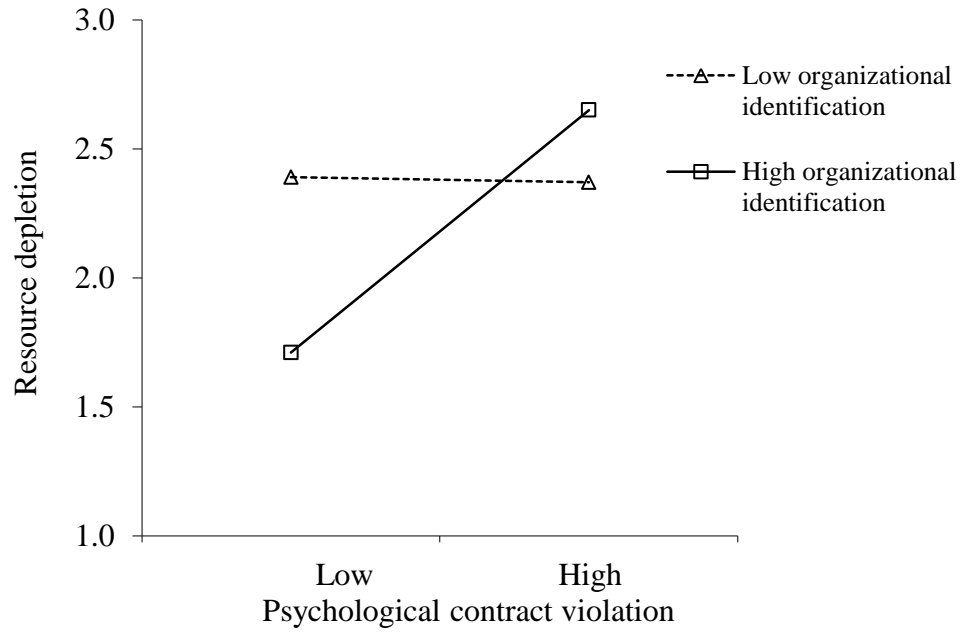


Figure 3a. Interaction between Psychological Contract Violation and Organizational Identification on Resource Depletion (Study 3)

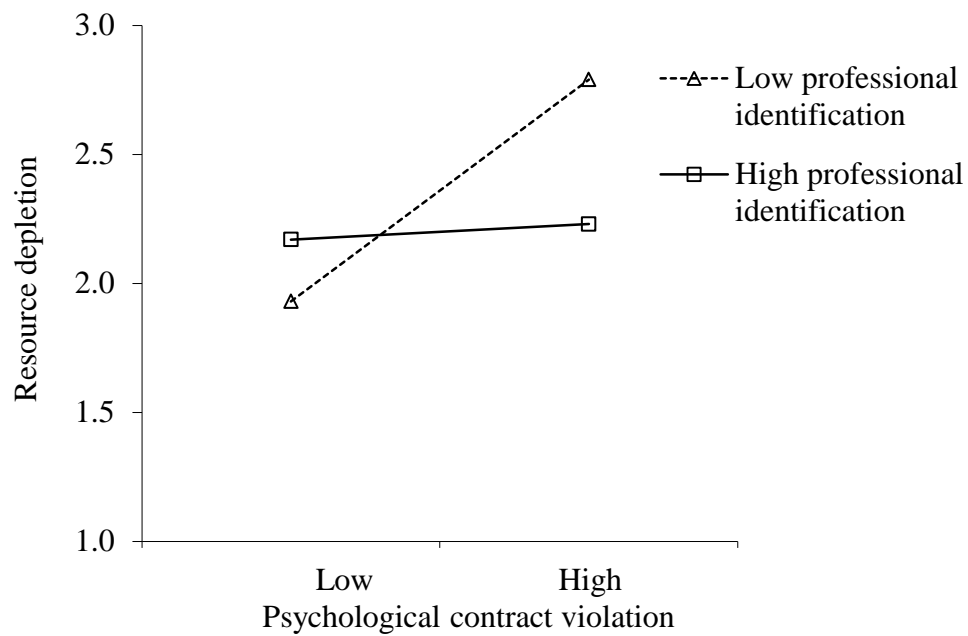


Figure 3b. Interaction between Psychological Contract Violation and Professional Identification on Resource Depletion (Study 3)